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# The Impact of Unemployment Insurance on Wages, Search Intensity, and the Probability of Re-employment

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## Purpose

The purpose of this brief is to highlight the preliminary results of a major research project on the impact of unemployment insurance and other determinants on the length of unemployment periods, the intensity of job search, and the post-displacement wage.

## Introduction

This paper extends upon a previous study by the same authors, *Unemployment Insurance and Job Search Productivity*, to include an exhaustive analysis of reservation wage determinants with particular emphasis on UI eligibility.

The study is divided into five sections.

- A description of the work undertaken on the Canadian Out of Employment Panel (COEP) survey data to render it suitable for analysis.
- The replication and validation of the previous study using National Employment Survey (NES) data and a comparison of the results using the COEP data set.
- Examination of preliminary findings on the determinants of the reservation wage both in a static and a dynamic sense with a particular emphasis on UI eligibility.
- Demonstration that UI eligibility has a bell-shaped impact on re-employment probability.
- A summary of the main results concerning the impact of past UI use on unemployment duration and frequency.

## Methodology and Data Analysis

### *Canadian Out of Employment Panel Data*

The previous study may have had a possible selection bias with respect to the general unemployed population since all persons in the NES had taken the necessary steps to contact a Canada Employment Centre. The COEP corrects the limitations of the NES by conducting random sampling of respondents who filed a record of employment during the first half of 1993, by utilizing a different period in the business cycle, and by using an improved match with the respondent's administrative history.

The data set used was constructed from COEP data with a random sample of workers who had separated from their employers during the first six months of 1993. Respondents were interviewed five, eight and twelve months after their employment separation date. During these interviews, respondents were questioned on their socio-economic characteristics, labour market status, job search activities and characteristics of their new job, if one had been found.

The COEP data indicated that a significant number of separated workers were seasonal employees from Ontario and Quebec and generally poorly educated. The average length of unemployment was 24 weeks. The March 1994 update of the status vector was used to assess the unemployed worker's eligibility for UI benefits. Three types of users were identified; those who never claim, those who filed a new claim when they lost their job and



those who renewed an existing claim. Another advantage of the COEP data was the availability of a complete historical status vector file, allowing the total number of claims filed by a respondent to be computed. This includes the total number of claims for which payments were made, the number of weeks paid and the total amount of payments made to the applicant. Also, for those applicants who filed more than one claim, the frequency of these claims was computed. This historical data was used in this study to analyze the effect of past UI experience on the unemployed's behaviour.

#### *Replication of the National Employment Survey*

The incidence of UI on the unemployed's search effort was re-estimated in greater detail as a result of the enhanced data set. The two main results of the NES study were that UI eligibility had almost no direct influence on search intensity, and that search effort decreased after 9 months of unemployment and became non-existent after 18 months. The COEP data set provided better information on search effort, since respondents were specifically asked how many hours they have spent searching in a typical week at various points during their spell of unemployment.

Two analyses are presented on the impact of UI on search efforts. The first analysis examines the level of effort at the beginning of the spell. People with large assets tend to search less, while older workers, men, high tenured workers and people with high debts or mortgage payments search harder. Unionized workers search significantly less than others. UI eligibility has no strong effect on initial search intensity. Workers who lose seasonal employment exhibit much less intense search activity than others. The analysis also indicated that workers who filed numerous claims in the past tend to have a limited search effort not because they filed many claims in the past but because they tend to expect to be recalled as a result of their seasonal employment.

The second analysis examined the level of effort at various points during the spell. This analysis is based on questions asked to workers currently unemployed regarding their search effort just prior to the interview. It was also possible to examine how intensively persons searched at various points in the unemployment spell. Except for workers with more than 40 weeks of benefits, it remains true that there is no significant relationship between eligibility and the pattern of search effort within unemployment spells even after controlling for unemployment duration. It was found that search intensity tends to increase initially during a period of unemployment and thereafter fall regardless of the respondent's UI eligibility. The point at which intensity begins to fall is close to the 6 months after separation, as reported in the earlier study. One possible interpretation is that the experience of the last two recessions has taught the unemployed to temper the degree of their discouragement.

The COEP data set produced some interesting wage results. As was the case for the NES data set, it was found that UI eligibility increased the post-employment wage by 7 to 8 percent. Wage losses, even with control for the old wage, are strongly related to the worker's level of education. Less educated people lose more. Wage losses are 16 percent higher for workers with no more than elementary school training and 11 percent for workers with some university education. Wage losses are also larger for younger workers. Confirmation of these results implies that the last recession hurt younger workers more than their elders. These results were confirmed after a battery of econometric methods were applied to deal with these potential technical issues.

#### *An Analysis of UI and Reservation Wages*

Another important feature unique to the COEP data set is that it provided detailed information on the assets and liabilities of the respondent. These variables are very likely to affect the reservation wage of the unemployed without directly affecting unemployment duration.

With the COEP data set it is now possible to analyze the reservation wage as declared by the respondents at the time they lost their job. This initial reservation wage is influenced principally by the lost wage. In addition to this pre-displacement wage effect, older workers are more selective and younger workers more readily accept wage cuts to find a new job. Women and members of minority groups are also inclined to agree to wage reductions, while workers who lost a unionized job are less likely to take a pay cut. As expected, the unemployed worker's assets have a positive effect on the reservation wage: the wealthier, the longer the waiting period. Surprisingly, however, the level of rent or mortgage payments also has a positive effect. It appears that workers subjected to long term high level payments will only consider a job which will allow them to meet those obligations.

As expected, unemployment insurance raises the reservation wage: ineligible workers have reservation wages 8 to 9 percent lower than those workers eligible for 50 weeks. Workers who are renewing an existing claim also have significantly higher reservation wages. This might be explained by the high number of seasonal workers among them who expect similar pay before and after their unemployment spell.

Most of these results are confirmed when studying the dynamics of the reservation wage during the spell. This is done by examining the reservation wage declared by the worker at each of the interviews. In this context, the lost wage remains the principal explanatory variable for the reservation wage and other forms of debt appear to be significant on occasion. For example, car loans appear with a borderline significant negative sign. Once again, unemployment insurance eligibility appears to significantly increase the reservation wage. The effect of UI is however slightly smaller than in the static equation. As expected, the length of the unemployment spell has a negative impact on the reservation wage. Its effect is, however, barely significant. While there is some evidence that unemployed

workers revise their reservation wage downward as the spell progresses, there is no evidence that the speed of the revision differs across workers with different levels of eligibility. Eligibility affects the reservation wage at the outset of the spell but does not affect its dynamics over the spell.

#### *UI and the Probability of Re-Employment*

UI has a strong positive effect on unemployment duration. Workers ineligible for UI have a higher probability of securing new employment than workers receiving 50 weeks of benefits. Unemployed workers with UI eligibility of less than thirty weeks have an even higher success rate than those eligible for 50 weeks. This suggests an important policy implication that UI eligibility lengthens unemployment duration for workers with 30 weeks or more of eligibility only.

The study found that a higher reservation wage and a more intense search tend to increase the probability of finding a job. While the effect of search intensity is as expected, the effect of the reservation wage is highly unexpected. However, this effect is not immune to specification changes and becomes insignificant when different specifications are applied. Alternatively, it is possible that unobserved heterogeneity is responsible for the unexpected sign. Workers expecting to receive offers quickly set high reservation wages and despite these they succeed in finding jobs quickly. Those expecting difficulties set lower reservation wages but still find it more difficult to secure employment. This suggests that UI does not appreciably lengthen unemployment spells due to the search subsidy arguments typically accepted.

#### *UI History and Unemployment*

An interesting question from a policy perspective is whether previous unemployment spells, and previous use of the UI system, affect the current spell both in terms of duration and UI payments. Some workers repeatedly experience short spells while others experience infrequent long spells.

These results reflect both the dual nature of typical unemployment – short and frequent or long and infrequent spells – and the importance of a workers' UI history as a determinant of the length of the current spell. This should not be misconstrued as clear evidence of addiction. Further study results indicated a positive relationship between the weeks of paid benefits across spells could simply be caused by the characteristics of the worker or a stigma affect, rather than by increasing lengths of spells due to an acquired taste for UI benefits. Regardless of the cause, past spells of unemployment can result in workers being identified as poor performers and cause increased difficulty for the worker to secure new employment.

## Biographical notes

**Pierre-Yves Crémieux** received his Ph.D. in Economics from the University of California at Berkeley and became an assistant professor at the Université du Québec à Montréal in 1992. His areas of research interest are industrial organisations, labour economics and industrial relations.

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